

PHOSDRIN RESIDUE ON STRAWBERRY LEAVES
MONTEREY COUNTY, MAY 1975

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California Department of Food and Agriculture
Division of Pest Management, Environmental
Protection and Worker Safety
Worker Health and Safety Branch
1220 N Street, Sacramento, California 95814

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Phosdrin (mevinphos) is a short-lived organophosphate pesticide often applied to strawberries near harvest. With oral and dermal LD₅₀ values (rat) of 3.7 and 4.2 mg./kg. respectively, phosdrin is one of the most toxic pesticides in use.

The preharvest interval for phosdrin application to strawberries is one day. In order to check foliar residues following phosdrin application, two treated fields in the vicinity of Chular, Monterey County, were sampled the day and one day after application. Three samples of leaf discs were collected at each sampling interval. Duplicate samples were extracted for dislogeable and penetrated residues and total residue was extracted from the third sample. Extraction procedures are detailed in an attachment. The analyses were carried out with a gas chromatograph equipped with a flame photometric detector. Both alpha and beta isomers of phosdrin were quantitated. Weather conditions during the application and sampling period were mostly overcast with fog and low clouds with high temperatures near 60°F and lows near 50°F.

The following residue levels were observed:

One pint Soil Serv Phosdrin 4E/20 gallons/acre applied by helicopter on April 30, 1975.

Hours After Application	Dislogeable Residue ppm		Penetrated Residue ppm		Total Residue ppm	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
7	11.1	10.0	11.0	5.7	18.5	11.7
	11.1	12.1	19.1	10.2		
32	4.6	4.1	5.0	5.6	6.2	6.4
	5.8	5.8	2.5	2.5		

Two pints Soil Serv Phosdrin 4E/20 gallons/acre applied by helicopter.

Hours After Application	Dislogeable Residue		Penetrated Residue		Total Residue	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
8	11.2	11.0	7.3	4.8	19.6	15.6
	6.7	7.2	8.2	5.2		
27	2.5	2.6	4.9	5.8	6.2	9.3
	3.1	3.0	2.1	2.6		

The data indicates significant phosdrin residues may remain on strawberry foliage beyond 24 hours. Observance of the 24 hour preharvest interval may not be sufficient to completely protect harvest workers. Further studies involving 4-5 sampling intervals between applications and 48 hours later, would be desirable.